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WHAT IS CLAIMED IS:

1. Hydrogel that changes its shape and volume in response to change in pH and/or in response to change in temperature, formed by photocrosslinking of dextran-maleic acid monoester and N-isopropylacrylamide in a composition comprising from 10 to 75% by weight dextran-maleic acid monoester and from 90 to 25% by weight N-isopropylacrylamide, with the total of the dextran maleic acid monoester and N-isopropylacrylamide being 100%.
2. The method of Claim 1 which is formed by photocrosslinking dextran, maleic acid monoester and N-isopropylacrylamide in a composition comprising from 20 to 65% by weight dextran-maleic acid monoester and from 80 to 35% by weight N-isopropylacrylamide.
3. The hydrogel of Claim 2 where the dextran-maleic acid monoester has an average degree of substitution ranging from 0.85 to 0.95 and a weight average molecular weight ranging from 65,000 to 75,000 on a dextran basis.
4. The hydrogel of Claim 3 which has a lower critical solution temperature which is less than or near body temperature.
5. A hydrogel forming system comprising a solution of from 10 to 75% by weight dextran-maleic acid monoester and from 90 to 25% by weight N-isopropylacrylamide based on the total of the dextran-maleic acid monoester and the N-isopropylacrylamide being 100%.